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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/059,562 04/14/98 KONUMA

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SIXBEY FRIEDMAN LEEDOM & FERGUSON
2010 CORPORATE RIDGE SUITE 600
MCLEAN VA 22102

EXAMINER

NGUYEN, D

ART UNIT

PAPER NUMBER

2871

DATE MAILED:
12/06/00

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/059,562

Applicant(s)

KONUMA ET AL.

Examiner

Dung Nguyen

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 31-117 is/are pending in the application.
- 4a) Of the above claim(s) 99-108 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☐ Claim(s) 31-98 and 109-117 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claims ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 15) ☒ Notice of References Cited (PTO-892) 18) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 16) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 19) ☐ Notice of Informal Patent Application (PTO-152)
- 17) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2 and 13. 20) ☐ Other:

Applicants' election without traverse Group I (claims 31-98 and 109-116) is acknowledge.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 76 and 78 recites the limitation "said resin" in line 1. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 31 and 32 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al., US Patent No. 5,221,980.

The above claims are anticipated by Yamamoto et al. figure 2 and accompanying text which disclose a ferroelectric LCD comprising:

- . a pair of substrates (11a, 11b);
- . ferroelectric liquid crystal (14) not having a helical structure (col.2, lines 28+), and not having bistability (memory characteristic property)(see Summary of the Invention);
- . an electrode (12) provided over the pair of substrates;

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. an orientation film (13).

Claims 109, 113 and 116-117 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsuboyama, US Patent No. 4,796,979

The above claims are anticipated by Tsuboyama's figure 1 which disclose an LCD matrix device and a method for forming thereof comprising:

- . a pair of substrates (1a, 1b);
- . ferroelectric liquid crystal (5);
- . an electrode (2) provided over the pair of substrates;
- . an orientation film (3);
- . a resin layer (4);
- . transmitted light amount inherently response to the applied voltage.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 33-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al., US Patent No. 5,221,980 , in view of Tsuboyama, US Patent No. 4,796,979, further in view of Tsuboyama, US Patent No. 4,775,225.

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Regarding claim 33, Yamamoto et al. disclose the claimed invention as described above except for antiferroelectric liquid crystal material. It would have been obvious to one of ordinary skill in the art at the time of the invention to use antiferroelectric liquid crystal because such material is well known in the art for tristable switching in order to improving the contrast of the overall display.

Regarding claims 49-51, although Yamamoto et al. do not disclose an active matrix display type, it would have been obvious to one of ordinary skill in the art at the time of the invention to form an active matrix LCD type since it is a common practice in the art to provide a better contrast and viewing angle.

Regarding claims 34-39, 46-48 and 52-54, Yamamoto et al. disclose the claimed invention as described above except for a resin layer forming over the orientation film. Tsuboyama '979 discloses a resin film (4) can be formed over an orientation film (3) for increasing tilt angle in liquid crystal material. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form a resin film over an orientation film as shown by Tsuboyama '979 in order to increase the transmittance of a pixel (col. 2, ln. 56).

Regarding claims 40-45 and 55-66, the modification to Yamamoto et al. discloses the claimed invention except for the resin having a form of protrusion or column. Tsuboyama '225 disclose a resin layer can be formed as a protrusion or column (307) from a resin layer (306) in an LCD device (fig. 3A). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form a resin film having a form of protrusion or column over an orientation film as a spacer between two substrates in order to keep a LCD at a constant distance at a uniform and constant thickness.

Claims 67-78, 83-98, 110 and 114-115 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuboyama, US Patent No. 4,796,979.

Regarding claims 67-68, 71-72, 75-76, 83-84, 87-88 and 91-92, Yamamoto et al. disclose the claimed invention as described above except for transmitted light amount of a pixel taking a halftone. It is well known in the art to use a halftone in transmitted light amount for clearing a display state in a ferroelectric display. Therefore, it would have been obvious to one skill in the art to use a halftone in transmitted light amount in order to rewrite a display state in a ferroelectric liquid crystal display device.

Regarding claim 69-70, 73-74, 77-78, 85-86, 89-90, 93-94 and 114, Yamamoto et al. disclose the claimed invention as described above except for antiferroelectric liquid crystal material. It would have been obvious to one of ordinary skill in the art at the time of the invention to use antiferroelectric liquid crystal because such material is well known in the art for tristable switching in order to improving the contrast of the overall display.

Regarding claims 95-98 and 115, although Yamamoto et al. do not disclose an active matrix display type, it would have been obvious to one of ordinary skill in the art at the time of the invention to form an active matrix LCD type since it is a common practice in the art to art to provide a better contrast and viewing angle.

Regarding claims 110, although Yamamoto et al. do not disclose an UV curable resin based material for the resin layer, it would have been obvious to one of ordinary skill in the art at the time of the invention to use UV curable resin based material for the resin layer since it is a common practice in the art to form a desirable pattern.

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Claims 79-82 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuboyama, US Patent No. 4,796,979, in view of Tsuboyama, US Patent No. 4,775,225.

Regarding claims 79-82, the modification to Tsuboyama discloses the claimed invention except for the resin having a form of protrusion. Tsuboyama '225 disclose a resin layer can be formed as a protrusion (307) from a resin layer (306) in an LCD device (fig. 3A). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to form a resin film having a form of protrusion over an orientation film as a spacer between two substrates in order to keep an LCD at a uniform and constant thickness.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 31-98 and 109-117 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1-4 and 17-19 of U.S. Patent No. 5,594,569. Although the conflicting claims are not identical, they are not patentably distinct from each other because both the application and the patent disclose the same liquid crystal electro-optical device.

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Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dung Nguyen whose telephone number is 703-305-0423. The examiner can normally be reached on Monday-Thursday.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

DN

December 4, 2000



William L. Sikes
Supervisory Patent Examiner
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